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Gas measurement process comprises comparing three wavelength emissions to minimize measuring errors and maximize signal resolution

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Gas measurement comprises observing light emitted from a measuring cell at three or more wavelengths and comparing the measurements to minimize measuring errors. The concentration of one or more gases in a mixture is measured by generating a signal using a quotient process. Light emitted from a measuring cell is observed at three or more wavelengths. A first measurement (optical measurement) is taken in the optical range within which the primary emissions are absorbed. A second measurement (comparative channel) is taken at a wavelength at which most of the gases in the mixture are subject to no negligible absorption. A third measurement is taken at a wavelength at which there is significant absorption in comparison with the reference wavelength. The difference is determined between the outputs in the comparison and measured channels, and between the output signals in the comparative and correction channels. The denominator in the quotient process includes a correction factor for the relative change in the comparative channel arising from interference components.

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